CLAIMS:

I claim:

1. An apparatus for increasing blood flow to the skin of a person using the apparatus for regeneration of skin and digestion of adipose cells without causing an increase of gravity effects on the person, with a work-out device to be actuated with the legs, said work-out device being enclosed by an air-tight housing, said housing comprising an opening which is formed for the tight enclosure of the person in the area of the waist, with a device for the production of a differential pressure in said housing, said device being connected with said housing and being arranged so as to alternatingly produce a pressure reduction and a pressure increase in the housing, wherein, within said housing, a support means is arranged to take the body weight off the legs of the person.

2. An apparatus according to claim 1, wherein the support means is configures as a seat.

3. An apparatus according to claim 1, wherein the device for producing a differential pressure is arranged so as to ensure a predetermined air throughput through the housing.

4. An apparatus according to claim 1, wherein the pressure reduction is performed by a differential pressure of 0.02 to 0.2 bar.

5. An apparatus according to claim 1, wherein the pressure reduction is performed by a differential pressure of 0.05 bar to 0.15 bar.

6. An apparatus according to claim 1, comprising a sealing collar for sealing the housing in the area of the opening against the person's body,

wherein in the area of the opening at least one further chamber is provided which is sealed by a further sealing collar against the person or the person and the lounger means, and whose internal pressure can be adjusted in accordance with the internal pressure in the first chamber.

7. An apparatus according to claim 1, wherein the first sealing collar is formed for sealing in the area of the person's hip, whereas the second sealing collar for sealing is arranged in the area of the person's thorax.

8. An apparatus according to claim 1, wherein the work-out device is driven by an electromotor and is braked by the body power of the person.

9. An apparatus according to claim 1, wherein the seat to support the person is adjustable in height.

10. An apparatus according to claim 1, wherein the opening is laterally arranged and wherein the support means is configured as a lounger means, said lounger means extending through the opening into the housing, wherein the person takes a substantially horizontal position on the lounger means during the physical exercise.

11. An apparatus according to claim 10, wherein the lounger means is arranged longitudinally displaceable within the housing.

12. An apparatus according to claim 10, wherein the lounger means comprises an adjustment means for inclining the lounger means.

13. An apparatus according to claim 10, wherein a seat is arranged on the lounger means.

14. An apparatus according to claim 1, wherein a shoulder support is arranged on the lounger means.

15. An apparatus according to claim 1, wherein the sealing collar is formed as an inflatable sealing ring and seals the opening against the lounger means and the person.

16. An apparatus according to claim 1, wherein the sealing collar is formed as a vacuum cover.

17. An apparatus according to claim 1, wherein the housing is formed as a round body, in particular in the shape of an egg.

18. An apparatus according to claim 17, wherein the housing can be divided into half-shells, wherein each half-shell comprises a portion of the opening, which are joined by a locking system.

19. An apparatus according to claim 1, wherein the working means is formed as one of a stepper, a room bicycle and an ellipse trainer.

20. An apparatus according to claim 1, wherein a portion of the housing at the opening is formed as an entry element.

21. An apparatus according to claim 1, wherein a control means is arranged outside of the housing.

22. An apparatus according to claim 1, wherein within the housing at least one main chamber and at least one additional pressure chamber are provided, said additional pressure chamber being substantially pressure-tight sealed against the main chamber and can be loaded by a pressure that is different to the pressure in the main chamber.

23. An apparatus according to claim 22, wherein the additional pressure chamber is arranged in the area of the trunk, in particular in the area of the abdomen of the person.

24. An apparatus according to claim 1, wherein magnetic coils are provided at least in one chamber in order to generate a magnetic field in the area of the person.

25. An apparatus according to claim 24, wherein the magnetic coils encompass the abdomen of the person.

26. An apparatus according to claim 24, wherein the magnetic coils encompass the legs of the person.

27. An apparatus according to claim 1, wherein light sources for irradiating the person are provided at least in one chamber.

28. An apparatus according to claim 1, wherein an air conditioning means for adjusting the temperature and the air moisture are provided.

29. An apparatus according to claim 28, wherein the air conditioning means is capable of air conditioning each individual chamber independent from the other chamber.

30. An apparatus according to claim 1, wherein a first vacuum pump for evacuating the main chamber and at least a further vacuum pump for evacuating the at least one further chamber are provided.

31. An apparatus according to claim 1, wherein one single vacuum pump is connected via a first pressure control valve to the main chamber and via at least one further pressure control valve with the at least one further chamber.

32. Apparatus for increasing blood flow to the skin of a person using the apparatus for regeneration of skin and digestion of adipose cells without causing an increase of gravity effects on the person comprising:

means for doing physical exercise, said means being actuated by the legs;

means for generating a pressure different from the ambient pressure;

means for containing the pressure generated by said means for generating a pressure, said means for containing the pressure being arranged such that it houses the means for doing physical exercise and that it sealingly surrounds lower parts of said person's body;

wherein said apparatus further comprises

means for supporting the body weight of said person, said means for supporting the body weight of said person being arranged such that the legs are not exposed to the body weight during use of said means for doing physical exercise.

33. A method for increasing blood flow to the skin of a person and for regeneration of skin and digestion of adipose cells without causing an increase of gravity effects on the person, comprising the following steps:

placing the lower part of said person on a support means in a pressure chamber, said pressure chamber being equipped with a work-out by means;

closing seals around the body of said person to contain the pressure in said pressure chamber;

having said person to start using the work-out means against a resistance generated by the work-out means;

wherein said method comprises the further steps of

first stimulating the circulatory system of said person by using the work-out device under ambient conditions,

then generating a pressure below atmospheric after said person has been using the work-out means for a specific amount of time.

34. A method according to claim 33, comprising the further steps of monitoring the circulatory system of said person, and adapting the pressure reduction depending on the result of said monitoring step.

35. A method according to claim 33, comprising the further step of reducing the lower pressure in predetermined time intervals by predetermined pressure intervals.

36. A method according to claim 33, comprising the further step of permanently changing between a pressure above or equal to normal pressure and a lower pressure in predetermined time intervals after having reached reaching a predetermined maximum lower pressure.

37. A method according to claim 33, comprising the further step of controlling the treading resistance in accordance with the pulse rate of the person.

38. A method according to claim 33, comprising the further step of: ventilating the pressure container in between pressure changes.

39. A method according to claim 33, comprising the further step of: increasing the resistance of the work-out means in intervals of low pressure.